

TOWN OF DAVIE TOWN COUNCIL AGENDA REPORT

TO: Mayor and Councilmembers

FROM/PHONE: David Quigley, AICP, Planning and Zoning Manager/ (954) 797-1103

PREPARED BY: Ingrid Allen, Planner III

SUBJECT: ZB(TXT) 8-2-07 Night Sky Regulations

AFFECTED DISTRICT: Townwide

ITEM REQUEST: **Schedule for Council Meeting**

TITLE OF AGENDA ITEM: CODE AMENDMENT - AN ORDINANCE OF THE TOWN OF DAVIE, FLORIDA, AMENDING THE LAND DEVELOPMENT CODE, CHAPTER 12, IN ORDER TO PROVIDE NIGHT SKY REGULATIONS BY AMENDING ARTICLE VIII, DIVISION 2, SECTION 12-260, LIGHTING STANDARDS; SECTION 12-261, STREET LIGHTING; ADDING ARTICLE VIII, DIVISION 2, SECTION 12-262, NIGHT SKY REGULATIONS; AMENDING ARTICLE III, DIVISION 1, SECTION 12-32.524, BUILDING DESIGN GUIDELINES; SECTION 12-32.525, ADDITIONAL DESIGN GUIDELINES; ARTICLE XIV, SECTION 12-503, DEFINITIONS; PROVIDING FOR INCLUSION IN THE TOWN CODE; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

REPORT IN BRIEF: On February 7, 2007, Town Council approved on the first reading the proposed Land Use Plan Amendment (LA 05-02) for the "The Commons" commercial project. One of the conditions of approval on the plan amendment was that the applicant agree to work with Town staff to develop a night sky ordinance based upon those used in California that require a reduction in light pollution through the installation of special light fixtures.

Staff has researched numerous municipal Night Sky regulations currently in place throughout the United States in order to create the proposed ordinance. Staff also incorporated non-technical parts of the proposed Night Sky Ordinance submitted by Bill Laystrom on behalf of "The Commons" applicant. The Town's Land Development Code, with the exception of Sections 12-32.524-525, regarding Regional Activity Center Districts, generally does not address regulations on the reduction of light pollution. Current lighting standards in the Code do require minimum lighting levels (footcandles)

for specific uses, however, regulations regarding the type of lighting fixture are not generally addressed.

The intent of the proposed ordinance to minimize light pollution by requiring Full Cut-Off lighting fixtures were applicable (see attached 'discussion matrix' for summary of key points). Full Cut-Off fixtures are luminaries (a complete lighting unit consisting of a light source and all necessary mechanical, electrical and decorative parts) that are designed in such a manner that no light is present at or above a horizontal plane (see Exhibit #1). Sections 12-32.524-525, which apply to the Regional Activity Center Districts, do address architectural lighting as well as light sources, however, the proposed text amendment provides more comprehensive standards than what is currently addressed in these Sections. In addition, the Griffin Corridor Architectural Design Manual does not currently require lighting fixtures that reduce light pollution but does require luminaries to be similar in style to the Sternberg Vintage Lighting, Avenue or Old Town (see Exhibit #2). Although these type of lighting fixtures cannot achieve Full Cut-Off status, Cut-Off status (a minimum of light is directed at a horizontal plane. See Exhibit #1) can be achieved through the use of a shield. (Note: The Western Theme Development Manual states that lighting fixtures are to be patterned after kerosene and gaslights. These types of lighting fixtures cannot be required to provide Cut-Off status due to the fact that they cannot be shielded. Therefore, the Western Theme District is exempt from Section 12-262.)

The attached discussion matrix addresses key policy issues including issues raised by the Local Planning Agency.

PREVIOUS ACTIONS: none

CONCURRENCES: At the December 10, 2008 Local Planning Agency meeting, Chair McLaughlin made a motion, seconded by Ms. Turin, to approve subject to adding an exemption for sports lighting during time of operation; that “clean up” be done in Section 12-262 B; and to review and remove any references to the single-family homes. (Motion carried 4-1)

FISCAL IMPACT: not applicable

Has request been budgeted? n/a

RECOMMENDATION(S): Staff recommends approval of the ordinance.

Attachment(s): staff discussion matrix, Ordinance, Exhibit #1, Exhibit #2,

Discussion Matrix

Issue	Staff Discussion:
Section 12-260 Lighting Standards	This Section of the Code is being amended in order to provide: § Updated information on the Illuminating Engineering Society of North America § Updated footcandle levels for residential and non-residential spillover
Section 12-261 Street Lighting	This Section of the Code is being amended in order to provide consistency with proposed Section 12-262 Night Sky regulations.
Section 12-262 Night Sky Reg.	§ The overall intent of the proposed Section is to provide lighting guidelines to include type of lighting fixture that will protect against glare, excessive lighting and light trespass.
Section 12-262 B. Applicability.	The proposed Night Sky regulations would apply to the following: § New developments and buildings § Building additions and modifications of 50% or more § Cumulative modification or replacement of outdoor lighting constituting 25% or more of the light fixtures for the parcel
Section 12-262 F. Lamp Type and Shielding Requirements per Fixture.	This subsection requires that all nonexempt outdoor lighting fixtures with the exception of the parcels located within the Rural Lifestyle or the Griffin Corridor Districts, be Full Cut-Off whereby the light source is fully-shielded. Parcels located within the Rural Lifestyle or the Griffin Corridor Districts would require lighting fixtures that are Cut-Off. Given current lighting design standards indicated in the Griffin Corridor Architectural Design Manual, a Full Cut-Off lighting fixture is not feasible in these areas.
Section 12-32.524 RAC"	This Section of the Code is being amended in order to provide consistency with lighting standards proposed in Section 12-262 Night Sky regulations.
Section 12-32.525 RAC"	This Section of the Code is being amended in order to provide consistency with lighting standards proposed in Section 12-262 Night Sky regulations
Section 12-503 Definitions	This Section of the Code is being amended in order to provide new definitions consistent with proposed Section 12-262 Night Sky regulations
LPA recommendation:	Staff Discussion:
The LPA approved subject to the removal of any references to single-family homes in Section 12-262(B).	Proposed Section 12-262(B) Applicability states that all new developments buildings and structures (to include single-family homes), shall abide by the requirements of this Section. However, Section 12-262(G) Compliance Review would exempt a single-family home from submitting an illumination plan to Planning and Zoning since, according to Section 12-369(1) the Land Development Code single-family residences are excluded from site plan review. As a result, staff did not exclude single-family homes from Section 12-262(B).

ORDINANCE _____

AN ORDINANCE OF THE TOWN OF DAVIE, FLORIDA, AMENDING THE LAND DEVELOPMENT CODE, CHAPTER 12, IN ORDER TO PROVIDE NIGHT SKY REGULATIONS BY AMENDING ARTICLE VIII, DIVISION 2, SECTION 12-260, LIGHTING STANDARDS; SECTION 12-261, STREET LIGHTING; ADDING ARTICLE VIII, DIVISION 2, SECTION 12-262, NIGHT SKY REGULATIONS; AMENDING ARTICLE III, DIVISION 1, SECTION 12-32.524, BUILDING DESIGN GUIDELINES; SECTION 12-32.525, ADDITIONAL DESIGN GUIDELINES; ARTICLE XIV, SECTION 12-503, DEFINITIONS; PROVIDING FOR INCLUSION IN THE TOWN CODE; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, unnecessarily bright and improperly designed or installed luminaries cause light pollution which diminishes the ability to view the night sky and results in light trespass and wasted resources; and

WHEREAS, the Local Planning Agency of the Town of Davie held a public hearing on the night sky regulations on December 10, 2008; and

WHEREAS, the Town Council of the Town of Davie held two (2) duly advertised public hearings as required by State Statutes.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF DAVIE, FLORIDA as follows:

(New language is underlined, deleted language is ~~struck through~~).

SECTION 1. Amending Section 12-260 of the Land Development Code of the Town of Davie to read as follows:

Sec. 12-260. Lighting standards.

Generally: All parking facilities and exterior site areas to be developed in the future, exclusive of single-family, duplex, and triplex units, shall be illuminated according to the standards contained herein.

- (1) For the purposes of this section, exterior parking facilities shall include the parking surface of open parking lots and access thereto, and parking areas and other unenclosed areas at grade level for which the parking facilities are a requirement. Garage parking facilities shall include underground, multilevel parking garages, and enclosed grade level parking facilities.

(2) Intensity of illumination:

- (a) For exterior parking facilities, the intensity of illumination shall provide an average maintained illumination of not less than one (1) footcandle ~~equal to one (1) lumen per square foot~~, and shall be well distributed in the pavement areas; however, at no point shall illumination be less than one-half (0.5) footcandle of light measured at grade level. The maximum to minimum footcandle level shall not exceed a twelve to one (12:1) ratio and the average to minimum footcandle level shall not exceed a four to one (4:1) ratio.
- (b) Garage parking facilities shall provide an average intensity of illumination of not less than fifty (50) footcandles at the entrance, ten (10) footcandles in traffic lanes and five (5) footcandles in storage areas.
- (c) Along public and private roadways serving new development where inadequate or no lighting exists, developers shall be required to install street lights with a maintained minimum of one-half (0.5) footcandle of light measured at grade level. The maximum to minimum footcandle level shall not exceed a twelve to one (12:1) ratio and the average to minimum footcandle level shall not exceed a four to one (4:1) ratio.
- (d) The current edition of the "IESNA Lighting Handbook," published by the Illuminating Engineering Society of North America, 345 East 47 Street 120 Wall Street, 17th Floor, New York, NY 10047-054001, is the standard to be used by the architect or engineer as a guide for the design and testing of parking facility lighting. The standards contained therein shall apply unless standards developed and adopted by this section or by the Night Sky regulations found in Section 12-262 or subsequent amendments are more restrictive, in which case the more restrictive standards shall apply.

~~(3) All site plans for buildings to be constructed after the effective date of this section must be accompanied by a parking facility lighting plan. The lighting plan shall be certified by a registered architect or engineer as providing illumination in accordance with the applicable minimum standards set forth in paragraph (2) above. Subsequent construction must comply with said lighting plan. If there exists a question concerning whether the work was done in accordance with specifications, the building official may require, as a prerequisite to the issuance of a certificate of occupancy, that the architect or engineer who prepared the plans certify that all work was done in accordance with specifications.~~

(3)(4) All required illumination shall be controlled by automatic devices:

- (a) For business uses with exterior or garage parking facilities, the required illumination shall be provided at least thirty (30) minutes after the closing time of any establishment served by the parking facility.

- (b) Any parking facility that serves a residential use must maintain the minimum levels of illumination established by this section through the use of natural or artificial light twenty-four (24) hours per day.
- ~~(4)(5)~~ In order to minimize offensiveness to persons on neighboring property and to eliminate distractions to and temporary blinding of drivers of vehicles passing illuminated property, all artificial parking lot or site area lighting shall ~~either be shaded or screened~~ fully shielded in a manner that will limit spillover of lighting onto adjacent property and public rights-of-way. Spillover, measured at the property line, shall not exceed ~~one (1) footcandle~~ the following footcandle levels vertical or horizontal illumination onto adjacent properties, light measured at grade level.:

<u>From:</u>	<u>To:</u>	<u>Footcandle</u>
<u>Non-residential</u>	<u>Non-residential</u>	<u>1.0</u>
<u>Non-residential</u>	<u>Right-of-way</u>	<u>1.0</u>
<u>Non-residential</u>	<u>Residential</u>	<u>0.1</u>
<u>Residential</u>	<u>Residential</u>	<u>0.1</u>

- ~~(6) The lighting installation shall not be placed in permanent use until a letter of compliance from a registered engineer or architect has been provided stating that installation has been field checked and meets the requirements as stated above.~~

SECTION 2. Amending Section 12.261 of the Land Development Code of the Town of Davie to read as follows:

Sec. 12-261. Street lighting.

- (A) *System Required:* A street lighting system shall be provided as part of the improvements in any new land development project. Installation of all underground facilities must be completed before the streets are paved. In addition, All lighting within areas governed by the Rural Lifestyle Regulations shall comply within section 12-297 and section 12-262.
- (B) *Design and Construction Standards:* All street lighting as required by this article shall conform to the following standards of design and construction:
- (1) All designs for lighting shall be approved by the town engineer, who will follow, as a minimum, the Illuminating Engineering Society of North America (IESNA) "Standard Practice for Street and Highway Lighting," 1953, for Type III Distribution (latest edition).
 - (2) Wiring for street lighting shall be underground except in areas where primary distribution conductors are overhead. Subject to the approval of the town engineer, the primary poles may be used for streetlights and associated wiring.
- (C) *Enforcement of Article:*

- (1) No building permit shall be issued in any new land development project unless the engineering drawings therefore contain adequate provisions for street lighting.
- (2) No certificate of occupancy shall be issued to any structure until the street lighting is completed and operable and in compliance with the Night Sky regulations found in Section 12-262 or a commitment acceptable to the town has been provided to ensure the timely completion of the lighting.
- (3) The specific design standards of this section may be waived by the town council where a waiver would not be detrimental to the public health, safety or welfare of the citizens of the town.

SECTION 3. Amending Chapter 12 of the Town Code of Ordinances by adding Article XIII, Division 2, Section 12-262 Night Sky regulations which shall read as follows:

A. INTENT AND PURPOSE.

The intent of this Section is to minimize light pollution for the enjoyment and use of property and the night environment by the residents of the Town of Davie. It is also the intent of this Section to encourage lighting practices and systems which will: minimize glare, light trespass and overlighting; conserve energy and resources while maintaining night-time safety, utility, security, and productivity; and curtail the degradation of the night time visual environment.

B. APPLICABILITY.

All outdoor lighting shall be installed in conformance with the provisions of this Section, and other pertinent codes as applicable and under appropriate permit and inspection.

1. *New Developments, Buildings and Major Additions or Modifications.* For all proposed new developments, buildings, and structures that require a site plan: (1) Relating to actual construction, all outdoor lighting fixtures shall meet the requirements of this Section. (2) All building additions or modifications of fifty (50) percent or more in terms of additional dwelling units, gross floor area, or parking spaces, either with a single addition or with cumulative additions subsequent to the effective date of this provision, shall invoke the requirements of this Section for the entire property, including previously installed and any new outdoor lighting. (3) Cumulative modification or replacement of outdoor lighting constituting twenty-five (25) percent or more of the light fixtures for the parcel, regardless of the actual amount of lighting already on a non-conforming site, shall constitute a major addition for purposes of this section.

2. Existing lighting. All existing lighting installed before the effective date of this Article, shall be considered a legal non-conformity unless certified by a registered architect or registered engineer.
3. Minor Additions. Additions or modifications of less than fifty (50) percent to existing uses, as defined in (1.) above, and that require a site plan relating to actual construction or a site plan modification, shall require the submission of a complete inventory and site plan detailing all existing and any proposed new outdoor lighting. Any new lighting proposed on the site shall meet the requirements of this Section with regard to shielding and lamp type. The total outdoor light output after the modifications are complete shall not exceed that on the site before the modification, or that permitted by this Code, whichever is larger.
4. Lamp or Fixture Substitution. Should any outdoor light fixture, or the type source therein, be changed after site plan approval relating to actual construction or a site plan modification approval has been issued, a site plan modification must be submitted for approval, together with adequate information to assure compliance with this Section, which must be received prior to substitution.
5. The Town of Davie will coordinate with other governmental entities as needed to facilitate bringing into compliance any roadway lighting and any other improvements.

C. PERMANENT EXEMPTIONS.

1. PERMANENT EXEMPTIONS

- a. Fossil Fuel Light. All outdoor light fixtures producing light directly by the combustion of fossil fuels (such as kerosene lanterns, gas lamps, etc.) are exempt from the requirements of this Section.
- b. Federal and State Facilities. Outdoor light fixtures on, in or in connection with facilities and land owned or operated by the government of the United States of America or the State of Florida are exempt from the requirements of this Section but voluntary compliance with the intent and provisions of this Division is encouraged.
- c. Emergency Lighting. Lights used by police, firefighting, or medical personnel, or at their direction, is exempt from all requirements of this Section for as long as the emergency exists.
- d. Holiday Decorations. Residential and commercial seasonal decorations using typical unshielded low-wattage incandescent lamps shall be permitted from Thanksgiving thru January 15. Holiday lights are encouraged to be turned off in residential areas by 11:00p.m. and after the business closes in commercial and industrial areas.
- e. Flag Poles.
- f. Underwater lighting used for the illumination of swimming pools, fountains and other water features is exempt from the lamp type and

shielding standards of this Section though it must conform to all other provisions of this code.

- g. Lighting of radio, communication and navigation towers is exempt; provided that the owner or occupant demonstrates that the Federal Aviation Administration (FAA) regulations can only be met through the use of lighting that does not comply with this Code.
- h. Airport Lighting. Lighting related to airport operations is exempt provided the owner or occupant demonstrates that the Federal Aviation Administration (FAA) regulations can only be met through the use of lighting that does not comply with this ordinance.
- i. Parcels located within the zoning district of RAC-AV are exempt (see Sections 12-32.400-12-32.419).
- j. Parcels located within the Western Theme District are exempt unless, at a minimum, a Cut-Off lighting fixture can be achieved.
- k. Lighting of signs governed by Article VIII, Division 1, Signs, is exempt.
- l. Sports field lighting is exempt.

D. TEMPORARY EXEMPTIONS.

- 1. Information Required. Any individual may submit a written request to the Planning and Zoning Division for a temporary exemption from the requirements of this Section. The fee for the temporary exemption shall be that fee prescribed in the Planning and Zoning Division fee schedule, as amended from time to time. The request for temporary exemption shall contain the following information:
 - a. Name, address and telephone number of the applicant;
 - b. Location of the outdoor light fixtures for which the exemption is requested;
 - c. Specific exemption(s) requested;
 - d. Use of the outdoor light fixtures involved;
 - e. Duration of the requested exemption(s);
 - f. Type of outdoor light fixture to be used, character of the shielding, if any;
 - g. Previous temporary exemptions, if any;
 - h. Such other data and information as may be required by the Planning and Zoning Division.

The Planning and Zoning division shall have ten (10) business days from the date of receipt of the request for an exemption to approve or disapprove the request. The applicant will be notified of the decision in writing.

- 2. Duration of Approval. The exemption shall be valid for not more than thirty (30) consecutive days from the date of issuance of approval. Exemptions are renewable for a period of not more than thirty (30) consecutive days. Requests for renewal of a temporary exemption shall be processed in the same manner as the original request. No outdoor light fixtures shall be exempted from this Division for more than sixty (60) days during any twelve (12) month period.

3. Disapproval and Appeal. If the Request for Temporary Exemption is disapproved by the Planning and Zoning Division, the applicant may appeal the decision to the Town Council. Appeals shall be submitted in writing within ten (10) working days from the date of notification of disapproval. The appeal fee shall be that fee prescribed in the Planning and Zoning Division fee schedule.

E. PROHIBITIONS.

1. Laser Source Light. The use of laser source light or any similar high intensity light for outdoor advertising or entertainment is prohibited.
2. Searchlights. The operations of searchlights for advertising purposes is prohibited.

F. LAMP TYPE AND SHIELDING REQUIREMENTS PER FIXTURE.

1. Shielding Standards. All nonexempt outdoor lighting fixtures, with the exception of those parcels located within the Rural Lifestyle or the Griffin Corridor Districts, shall be Full Cut-Off fixtures with the light source fully-shielded to prevent glare. For parcels located within the Rural Lifestyle, or the Griffin Corridor Districts all lighting fixtures shall be at a minimum Cut-Off where a minimum amount of light is directed at a horizontal plane. All light fixtures shall be designed to minimize stray light trespassing across property boundaries and all illumination shall be controlled by automatic devices.
 - a. Flood or spot lamps shall be aimed no higher than 45 degrees from nadir when the source is visible from any off-site residential property or public roadway. Depending upon the fixture selected, these flood or spot lamps may also be required to include a glare shield if deemed necessary to prevent glare.
 - b. All lighting for commercial and industrial areas shall be extinguished between 11:00pm and sunrise or when the business is closed, whichever is later. If for security reasons it is necessary to have some lighting, the use of motion sensors is strongly recommended or the installation of a dimmer to generate less light at night provided:
 - i. It is located in such a manner as to prevent glare and lighting on properties of others or into a public rights of way.
 - ii. The luminaire is set to only go on when activated and to go off within five minutes after activation has ceased.
 - iii. The luminaire shall not be triggered by activity off the property.
 - c. Canopy lights, such as service station lighting shall be Full Cut-Off so as to ensure that no light source is visible from or cause glare on public rights of way or adjacent properties.

- d. Area lights. All area lights shall be Full Cut-Off type luminaires.
 - e. Any lamp installed on a residential property must be fully shielded such that the lamp itself is not directly visible from any other residential property.
- (2) Landscape Lighting for Multi-Family and Commercial Buildings. Landscape lighting for commercial buildings is the only non-exempt lighting that may utilize uplight. However, the maximum initial illuminance value for this specific application, must adhere to the U.S. Green Building Council's latest version of LEED for New Construction and Major Renovation - Sustainable Site Credit 8 which limits the amount of uplight footcandles per the lighting zone the project is in.
- (3) Landscape Lighting for Residential Applications. See D. Special Exemptions.
- (4) Lamp Source. Preferred lamp sources for Parking Lots, Pedestrian Zones, and Street Lights are Pulse-Start Metal Halide or LED. Lamp sources for Architectural features may be any lamp type deemed appropriate by the lighting designer or otherwise allowed by Code, as long as it is in accordance with this and other sections of the code.

G. COMPLIANCE REVIEW.

- (1) The applicant for a site plan or site plan modification required by the Town of Davie involving outdoor light fixtures (except as exempted above) shall submit an illumination plan. That plan shall be certified by a registered architect or registered engineer as providing illumination in accordance with the applicable standards set forth in this division. Subsequent construction must comply with the approved lighting plan.
The illumination plan shall contain but not be limited to the following:
- a. The location of the site where the outdoor light fixtures will be installed, both proposed and any already existing on the site;
 - b. Plans indicating the location on the premises, and the type of outdoor light fixtures;
 - c. A description of the outdoor light fixtures including but not limited to manufacturer's catalog cuts, photometric study, and drawings.
- (2) The above required plan and descriptions shall be sufficiently complete to enable Town staff to readily determine whether the work will comply with the requirements of this Section. If such plan and descriptions cannot enable this ready determination, by reason of the nature or configuration of the devices, fixtures or lamps proposed, the applicant shall submit further evidence of compliance enabling such determination.
- (3) The lighting installation shall not be placed in permanent use until a letter of compliance from a registered professional engineer has been provided

stating that the installation has been field checked and meets the requirements as stated above.

- (4) Along private rights-of-way adjacent to new development where inadequate or no lighting exists, street lights shall be required according to the standards provided in this section. Along public rights-of-way adjacent to new development where inadequate or no lighting exists, developers shall be required to install street lights per FPL Street and Area Lighting Design Standards and Florida Department of Transportation Roadway and Traffic Design Standards.

H. HOURS OF OPERATION.

- (1) Lighting located within Residential (or with a residential component), Mixed Use, Commercial, Community Facility or Industrial areas are encouraged to be turned off between 11:00 p.m. and sunrise or when the business closes, whichever is later, except as indicated in Section 12-260 (4)(a) and as follows:
- a. On premises advertising signs may be illuminated while the business facility is open to the public;
 - b. Outside illumination of sales, commercial, assembly, repair, and industrial areas may be lit when such areas are actually in use.
 - c. Lighting exempted from this requirement under C. and D.

I. ALTERNATIVE COMPLIANCE. This subsection is not intended to prevent the use of any design, material or method of installation not specifically proscribed by this section, provided any such alternate has been approved. The Town Administrator or his/her designee may approve any such proposed alternate provided it:

- (1) Provides at least approximate equivalence to the applicable specific requirement of this section.
- (2) Is otherwise satisfactory and complies with the intent described for this section.

SECTION 4. Amending Section 12-32.524 (D) of the Land Development Code of the Town of Davie to read as follows:

"RAC" Regional Activity Center Districts

- (D) *Architectural Lighting.* The treatment of architectural lighting is an important visual enhancement to the built environment, it also is part of the overall illumination system which relates to safety at night.
- (1) *Principles.*

- (a) Lighting can either be concealed and indirect or can be provided by well designed, quality fixtures that create enhancement to the architecture that they are attached to.
- (b) Step lights and bollards at a walking level enhance safety and provide attractive lighting that does not create visual glare.
- (c) Street lighting should be of an attractive and long lasting design that fits well into the overall design context and should have light apertures that focus the lighting on the street and away from buildings so as not to disrupt the residences.
- (d) Minimum light levels must be met from a safety point of view but excessive lighting and energy waste must also be avoided.
- (e) Natural light colors are preferred; high pressure sodium (orange) lighting is discouraged.
- (f) Ballast noise/maintenance is also an important consideration.

(2) *Requirements.*

- ~~(a) All exposed lighting fixtures must be approved by the DRC.~~
- ~~(b)~~(a) All exterior steps and significant grade transitions must have light levels for safety per accepted industry standards.
- ~~(c)~~(b) Exterior exit ways, parking lots and public areas around buildings must have sufficient light levels for safety per accepted industry standards.
- ~~(d)~~(c) Lighting designs will be reviewed by the town from the standpoint of energy efficiency, color, quality, and aperture/spread.
- ~~(e)~~(d) High pressure sodium lighting will be limited to service areas and areas with limited public impact only.
- (e) All outdoor lighting fixtures shall be consistent with the Night Sky regulations found in Section 12-262.

SECTION 5. Amending Section 12-32.525 (D) of the Land Development Code of the Town of Davie to read as follows:

- (D) *Lighting.* A well-coordinated lighting system is an effective means of establishing a sense of security and unity throughout the RAC districts. Although the primary function of site lighting is to provide nighttime orientation and security, light fixtures become a very visible site element and are essential elements in creating the image of the RAC districts. Therefore, careful consideration should be taken not only to technically efficient systems but also to visually acceptable fixtures and standards. Lighting should only be directed at the selected element, over flow of light must not exist. All outdoor lighting fixtures shall be consistent with the Night Sky regulations found in Section 12-262.

- (1) *Scale, proportion, and hierarchy.* Consideration should be taken to the proper relation between the scale of a fixture and the scale of the area in which it will be implemented. In general, the larger the scale of the use, the higher the mounting light. The size of the fixture should also be in

proportion to the height of its pole to avoid awkward proportions. Different uses require varying types of lighting. This section deals with the different types and scale of fixtures as well as light levels (footcandles) and light sources acceptable for each anticipated use. (See section 12.32-415 for all lighting requirements.)

- (2) *Light levels.* The following minimum average maintained footcandle levels shall be provided for the RAC districts:

TABLE INSET:

Approach roadways	1.0 FC
Side streets	0.8 FC
Parking Lots	1.0 FC
Promenades	1.0 FC
Sidewalks	0.6 FC
Landscape lighting	(varies)

- (3) *Light source.* Several different light sources are available for site lighting, with characteristic advantages and disadvantages to each. The following general guidelines are included for selection of an appropriate light source.
- (a) *High Pressure Sodium.* Because of high efficiency and long lamp life, high-pressure sodium should be the predominant light source throughout the RAC districts. It should be used on all streets and parking lots. Because of its somewhat poor color rendition qualities, however, it should be avoided or supplemented in areas of high pedestrian use.
 - (b) *Metal Halide.* Although not as efficient as high-pressure sodium, metal halide is much more pleasant in high pedestrian areas because it illuminates with very true colors. It should be considered for larger scale "people gathering spaces" such as plazas and along people streets.
 - (c) *Color Corrected Mercury Vapor.* Mercury vapor is also a pleasant light source for pedestrian areas but it is less efficient than metal halide. It should be used only in low voltage situations where efficiency is not critical, or to accent landscape material because of its ability to emphasize green foliage.
 - (d) *Incandescent.* Incandescent light, while pleasant for people environments, is very inefficient and has a short lamp life. It should only be used in low-level pedestrian scale fixtures where special effects are necessary and where regular maintenance is possible such as building entries, small courtyards, etc.
- (4) *Light location.* Streetscape lighting (arterial and collector roads). Wherever possible, existing fixtures and poles illuminating the RAC districts should be retained, repaired, and or replaced to maintain the consistency and efficiency of the current street light system. As necessary, individual poles should be relocated to resolve conflicts with proposed streetscape elements

and pedestrian flow. Where supplemental or future street lights are proposed they shall match the existing fixtures/poles.

All poles shall be located a minimum of four (4) feet to zero (0) inches (4'-0") from the curb face and maintained plumb and secure. The placement of poles should not create undesirable obstructions in pedestrian ways. Light poles in high pedestrian traffic areas can be outfitted for specialty banners.

- (5) *Local street (a.k.a. side street) lighting.* Wherever possible, existing fixtures and concrete poles illuminating side streets should be retained, repaired and replaced to maintain consistency with the current street lighting system. As necessary, individual concrete poles should be relocated to resolve conflicts with proposed streetscape elements and pedestrian flow.

Fixtures along side streets shall be located approximately one hundred (100) feet on centers. All poles shall be located a minimum of four (4) feet to zero (0) inches (4'-0") from the curb face and maintained plumb and secure. The placement of poles should not create undesirable obstructions in pedestrian ways. Light poles on designated "people streets" shall be outfitted for specialty banners.

- (6) *Parking lot lighting.* Lighting in off-street parking lots should be designed to allow safe and secure night use of these facilities and discourage vagrants. Wherever possible, existing poles illuminating parking lots should be retained and repaired with new fixtures added to provide a more efficient and consistent lighting system. ~~These new fixtures and may supplemental/fixture parking lot lights proposed shall be (to follow).~~

Parking lot lights located interior to larger parking lots shall have a Type V (square) distribution to ensure maximum coverage and to be spaced approximately one hundred and twenty (+120) feet on centers. Parking lot lights located along the perimeter of parking lots shall have a Type III distribution to throw light towards the lot interior and minimize glare on adjacent facilities. These fixture/poles shall be spaced one hundred (+100) feet on centers.

Lighting within parking areas must be closely coordinated with parking lot design. Poles should be located out of the way of vehicular and pedestrian circulation aisles and parking stalls. They should be located at regular spacing within the landscaped area of center or side islands and protected by curbs or wheel stops.

- (7) *Pedestrian lighting.* Pedestrian lighting of the RAC districts must serve a variety of functions. This lighting must establish a safe and secure atmosphere for nighttime use and provide a distinct ambiance, which differentiates pedestrian facilities from adjacent vehicular zones. The fixtures, poles and bollards must have a human scale and offer a visual appearance, which complements the other streetscape elements in creating a unique image for the area.
- (8) *Landscape lighting.* In many instances, appropriate light levels and pleasant accent effects may be achieved through the use of landscape lighting.

Accent spotlight fixtures, directed upwards into tree or palm foliage, provide low intensity but often-dramatic illumination of nearby pedestrian areas.

Whereas up lighting provides a more selective result, down lighting (with fixtures attached to free standing poles or neighboring buildings) is advantageous when more than one tree is to be lit or when a less concentrated effect is desired. Lighting trees is as much art as it is science. For this reason, it is impossible to give definitive guidelines regarding the quantity of illumination or exact placement of fixtures. However, desired effects usually require between one-half (0.5) and one (1) ambient footcandles, depending on design objectives, color of foliage, surrounding light levels, etc.

When used, landscape accent lights should be unobtrusive in appearance and/or hidden from view. All landscape lighting should be placed where beams are directed away from pedestrians' viewpoint. Lights mounted directly in trees should be discouraged unless means of attaching the fixture and conduit are sensitively handled to protect the plant's health and assure a pleasing appearance.

- (9) *Materials.* Light fixtures are available in many materials. Of these materials, cast aluminum or cast bronze provides maintenance, long life, and pleasing aesthetics. Fixture fittings of cast aluminum fixtures should be stainless steel. Poles and bollards for lighting should be aluminum, fiberglass, decorative concrete, or cast iron. These poles provide a thin profile and require little maintenance. Depending on location and thematic considerations, decorative poles may be chosen. Light poles in main public areas should aim to enhance the overall theme of the RAC districts as a unique cultural hub.
- (10) *Color and finish.* During daylight hours, lighting fixtures should blend into the landscape and coordinate with other site furnishings. The right color and finish of the lighting material will enhance the theme during daylight hours, therefore making it a twenty-four (24) hour site detail. Finish should be baked-on powdered coatings that minimize maintenance.

SECTION 6. Amending Section 12.503 Definitions of the Land Development Code of the Town of Davie to read as follows:

Sec. 12-503 Definitions:

Cut-Off fixture. A luminaire with elements such as shields, reflectors or refractor panels which direct and cut off the light at a cutoff angle that is less than that allows a minimum amount of light directed at a horizontal plane (ninety (90) degrees). Light above the horizontal plane is limited to less than 2.5% of the total lamp lumens. (See Article VIII, Division 2.)

Full cut-off fixture. A luminaire, as installed, that is designed or shielded in such a manner that no light is present at or above a horizontal plane.

Fully shielded. A light fixture constructed in such a manner that all light emitted by the fixture, whether directly from the lamp or a defusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding must be permanently affixed. Fixture shall be mounted such that no light is emitted above the horizontal plane.

Glare. Light emitting from a luminaire with an intensity great enough to reduce a viewer's ability to see and in extreme cases to cause momentary blindness.

Light Pollution. Any adverse effect of manmade light including, but not limited to, discomfort to the eye or diminished vision due to glare, light trespass, uplighting, the uncomfortable distraction to the eye, or any man-made light that diminishes the ability to view the night sky.

Light Trespass. The shining of light produced by a luminaire beyond the boundaries of the property on which it is located.

Lumen. Unit of luminous flux; used to measure the amount of light emitted by lamps.

Nadir. The direction pointing vertically down from the lowest light emitting part of the luminaire.

Uplighting. Fully shielded lighting that is directed in such a manner as to shine light rays above the horizontal plane.

SECTION 7. All Ordinances or parts of Ordinances in conflict herewith are to the extent of such conflict hereby repealed.

SECTION 8. If any section, subsection, sentence, clause, phrase, title, or portion of this Ordinance is, for any reason, held invalid or unconstitutional by any Court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portion of this Ordinance.

SECTION 9. This ordinance shall take effect immediately upon its passage and adoption.

PASSED ON FIRST READING THIS ____DAY OF _____, 2009.

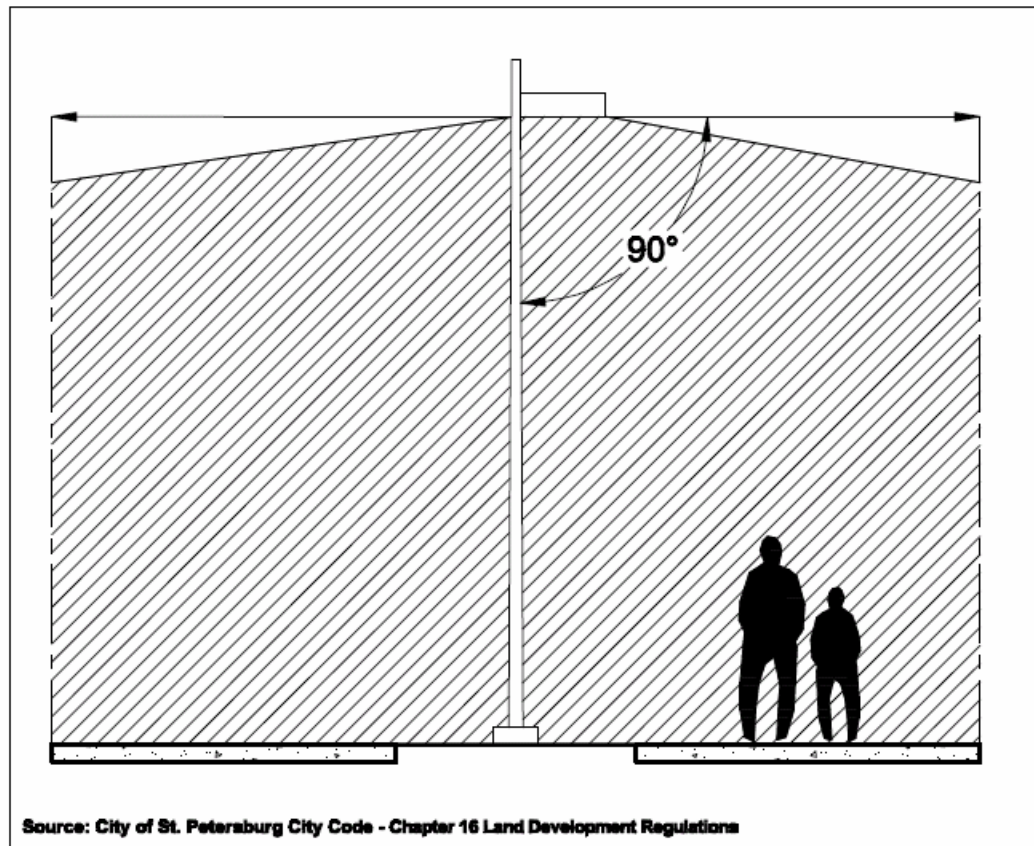
PASSED ON SECOND READING THIS ____DAY OF _____, 2009.

MAYOR/COUNCILMEMBER

ATTEST:

TOWN CLERK

APPROVED THIS ____DAY OF _____, 2009.



Full Cut-Off – no light is present at or above the horizontal plane (90 degrees).

Cut-Off – a minimum of light is directed at the horizontal plane. Light above the horizontal plane is limited to less than 2.5% of the total lamp lumens.

Building Details

I. Lighting

In order to ensure that all developments within the Griffin Corridor work together to create a true corridor environment, all light fixtures shall be of similar height and style. The height of all light poles to the top of the luminaire shall not exceed 25' in all parking areas. In areas designed for pedestrian travel, such as sidewalks and surrounding a building, the overall height of all light poles to the top of the luminaire shall not exceed 12-18 feet. The overall height of the pedestrian lights shall be determined by the scale of the associated building. The base of all poles shall be painted green. The luminaires selected shall be similar style to the Sternberg Vintage Lighting, Avenue or Old Town. The poles selected shall also be similar in style to the Sternberg Vintage Lighting Base, Lincoln or Vernon (pictured). Light fixtures along Davie Road and along Griffin Road within the CRA district shall utilize the same fixtures as along Davie Road north of Griffin Road.

